

REMARKS

The above amendments and these remarks are responsive to the non-final Office action dated March 18, 2009, and are being filed under 37 C.F.R. § 1.111. Claims 5–9, 11, 13–15, 17–26, 28, and 31–40 are pending in the application, prior to entry of the present amendments to the claims. In the Office action, the Examiner

- Rejected claims 5, 6, 9, 11, 13–15, 20–26, 28, 31, 33–38, and 40 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,217,462 to Asnis et al. (“Asnis”);
- Rejected claim 19 under 35 U.S.C. § 103(a) as being unpatentable over Asnis;
- Rejected claims 7, 8, and 32 under 35 U.S.C. § 103(a) as being unpatentable over Asnis in view of U.S. Patent No. 4,312,336 to Danieletto et al. (“Danieletto”);
- Rejected claims 17 and 18 under 35 U.S.C. § 103(a) as being unpatentable over Asnis in view of U.S. Patent No. 4,530,355 to Griggs (“Griggs”); and
- Rejected claim 39 under 35 U.S.C. § 103(a) as being unpatentable over Asnis in view of U.S. Patent No. 5,743,912 to Lahille et al. (“Lahille”).

Applicants traverse the rejections, contending that each claim is patentable over the cited references, taken alone or in combination. Nevertheless, to expedite the issuance of a patent, and to more particularly point out and distinctly claim aspects of the invention that applicants would like to patent now, the present communication amends claims 5, 6, 15, 19, 21, 24, 28, and 35; and adds one new claim, namely, dependent claim 41. However, applicants reserve the right to pursue any of the amended claims at a later time. Furthermore, applicants have presented arguments showing that all of the pending claims are patentable over the cited references, taken alone or in combination. Accordingly, applicants respectfully request reconsideration of the application in view of

the amendments above and the remarks below, and prompt issuance of a Notice of Allowance covering all of the pending claims.

I. Claim Rejections – 35 U.S.C. §§ 102 and 103

The Examiner rejected each of the pending claims as being anticipated by Asnis or as being obvious over Asnis alone or in combination with Danielelto, Griggs, or Lahille. Applicants traverse the rejections, contending that the claims are patentable over the cited references. Nevertheless, for the reasons set forth above, applicants have amended claims 5, 6, 15, 19, 21, 24, 28, and 35; and have added one new claim, namely, dependent claim 41. Each of the pending claims is patentable for at least the reasons set forth below.

A. Claims 5–9, 11, 13–15, 17–20, and 34

1. Claim 1

Independent claim 5, as currently amended, reads as follows:

5. (Currently Amended) A method of compressing a bone, comprising:

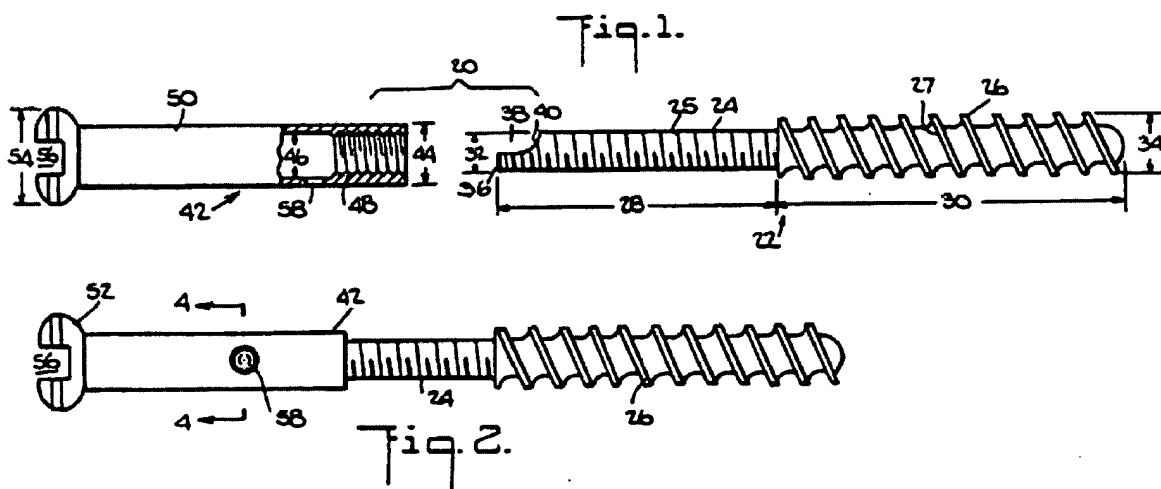
selecting a bone screw including

a shank including a thread disposed externally for threaded engagement with bone, the shank defining a long axis and a direction of advancement into bone, and

a head connected to the shank and defining three or more ~~a plurality of~~ shoulders disposed at spaced positions generally along the head, each shoulder facing generally toward the direction of advancement and extending partially or completely around the head to define a respective plane disposed orthogonally to the long axis; and

installing the bone screw as a unit in a bone such that a portion of the bone near the head is engaged by two or more of the shoulders and is urged toward a portion of the bone near the shank.

In the Office action, claim 5 was rejected as being anticipated by Asnis. However, Asnis does not disclose or suggest every element of currently amended claim 5. For example, the reference does not disclose or suggest a head "defining three or more shoulders." Asnis relates to an implant in the form of a bone screw. Figures 1 and 2 of the reference, which are reproduced below to facilitate review, present respective exploded and assembled views of an implant embodiment 20.



Implant 20 is a two-piece bone screw consisting of a proximal piece and a distal piece. The proximal piece includes an externally nonthreaded sleeve 42 and a head 52. The distal piece includes a proximal threaded shank portion 24 and a distal threaded shank portion 26. Proximal threaded shank portion 24 is received in threaded engagement with an internal thread formed inside sleeve 42.

The Examiner stated, in the Office action, that the implant of Asnis has a head with a plurality of shoulders as recited by claim 5. More particularly, the Examiner interpreted the proximal piece of implant 20 as being a head, with one shoulder provided by head 52 and another shoulder provided by the distal end of sleeve 42.

Applicants traverse the Examiner's interpretation of the term "head" with respect to Asnis. Claim terms should be given their broadest reasonable interpretation consistent with the specification, and "[t]he broadest reasonable interpretation of the claims must also be consistent with the interpretation that those skilled in the art would reach. *In re Cortright*, 165 F.3d 1353, 1359, 49 USPQ2d 1464, 1468 (Fed. Cir. 1999)" MPEP § 2111, 8th Edition, August 2001, Latest Revision July 2008. Applicants assert that the broadest reasonable interpretation for the term "head" with respect to Asnis's implant 20, in view of Asnis, applicants' disclosure, and the use of the term "head" by those of skill in the art, is head 52 of implant 20. Head 52 has only one shoulder that faces "generally toward the direction of advancement," as recited by claim 5.

Nevertheless, for the reasons set forth above, applicants have amended claim 5 to recite "a head connected to the shank and defining three or more shoulders disposed at spaced positions generally along the head, each shoulder facing generally toward the direction of advancement." Even if head 52 and sleeve 42 together are interpreted as being a "head," which applicants maintain is improper, these two elements in combination do not provide three or more shoulders.

None of the other cited references, taken alone or in combination, corrects this defect in Asnis. Thus, independent claim 5, as currently amended, should be allowed. Claims 6–9, 11, 13–15, 17–20, and 34, which depend from claim 5, also should be allowed for at least the same reasons as claim 5.

2. Claims 6 and 19

At least some of the dependent claims further distinguish claim 5 patentably from the cited references.

For example, claim 6, as currently amended, recites “wherein the step of selecting a bone screw includes a step of selecting a bone screw in which the shank has a proximal portion adjacent the head and a distal portion spaced from the head, and wherein the proximal portion has at least substantially no external thread formed externally on the bone screw.” Since sleeve 42 is the only part of implant 20 that can be interpreted as “the proximal portion” recited by claim 6, sleeve 42 of Asnis cannot be interpreted as providing a shoulder of the head. Accordingly, Asnis discloses only one shoulder.

As another example, claim 19 recites “wherein the step of selecting a bone screw includes a step of selecting a bone screw in which the head and the shank each are part of a same monolithic structure.” It would not have been obvious to form implant 20 with the head and the shank part of the same monolithic structure because this would have compromised the implant's ability to compress bone in the manner disclosed by Asnis.

Therefore, claims 6 and 19 should be allowed not only for depending from independent claim 5 but also for these additional reasons.

B. Claims 21–26 and 41

1. Claim 21

Independent claim 21, as currently amended, reads as follows:

21. (Currently Amended) A method of compressing a bone, comprising:

selecting a bone screw including

a shank including a proximal region, a distal region, and a thread disposed externally for threaded engagement with bone and restricted to the distal region, the proximal region having at least substantially no thread formed externally on the bone screw, and

a head connected to the shank adjacent the proximal region and ~~spaced from the thread by the proximal region, the head~~ defining a plurality of spaced shoulders disposed generally along the head, each shoulder extending in a respective plane to describe at least an arc of a circle; and

installing the bone screw as a unit in a bone such that a portion of the bone near the head is engaged by two or more of the shoulders and is urged toward a portion of the bone near the shank.

In the Office action, claim 21 apparently was rejected as being anticipated by Asnis. However, Asnis does not disclose or suggest every element of currently amended claim 21. For example, the reference does not disclose or suggest a head “defining a plurality of spaced shoulders” and “the proximal region [of the shank] having at least substantially no thread formed externally on the bone screw.” Instead, the head of Asnis’s implant 20 defines only one shoulder. Therefore, independent claim 21 should be allowed. Claims 22–26 and 41, which depend from claim 21, also should be allowed for at least the same reasons as claim 21.

2. Claims 24 and 25

At least some of the dependent claims further distinguish claim 21 patentably from the cited references.

For example, claim 24 recites "wherein the step of selecting a bone screw includes a step of selecting a bone screw in which the head includes at least three steps defined by stepwise decreases in the diameter of the head, and wherein the plurality of shoulders are included in the plurality of steps."

As another example, claim 25 recites "wherein the step of selecting a bone screw includes a step of selecting a bone screw in which the head is generally frustoconical in shape."

Therefore, claims 24 and 25 should be allowed not only for depending from independent claim 21 but also for these additional reasons.

C. Claims 28 and 31–33

Independent claim 28, as currently amended, reads as follows:

28. (Currently Amended) A method of compressing a bone with a bone screw, comprising:

forming a hole in the bone;

selecting a bone screw having a shank and a head connected to the shank, the head and the shank each being part of a same monolithic structure, the head defining at least three ~~a plurality of~~ shoulders disposed at spaced positions generally along the head, each shoulder facing generally toward the direction of advancement and extending partially or completely around the head to define a respective plane disposed orthogonally to the long axis; and

advancing first the shank and then the head of the bone screw into the hole via threaded engagement of the shank with the bone such that a portion of the bone near the head is engaged by two or more of the shoulders and is urged toward a portion of the bone near the shank.

In the Office action, claim 28 was rejected as being anticipated by Asnis. However, Asnis does not disclose or suggest every element of currently amended claim 28. For example, and for at least the same reasons as presented above for claims 5 and 19, the reference does not disclose or suggest "the head and the shank each being part of a same monolithic structure, the head defining at least three shoulders." Therefore, independent claim 28 should be allowed. Claims 31–33, which depend from claim 28, also should be allowed for at least the same reasons as claim 28.

D. Claims 35–40

1. Claim 35

Independent claim 35, as currently amended, reads as follows:

35. (Currently Amended) A method of compressing a bone, comprising:

- selecting a bone screw including
 - a shank including a thread disposed externally for threaded engagement with bone, the shank defining a long axis and a direction of advancement into bone, and
 - a head connected to the shank **such that the shank and the head each are part of a same monolithic structure, the head** ~~[[and]]~~ including **at least three** ~~a plurality of~~ spaced shoulders of different diameter, each shoulder facing generally toward the direction of advancement and extending partially or completely around the long axis in a respective path defining a plane; and
- installing the bone screw ~~as a unit~~ in a bone such that a portion of the bone near the head is engaged by two or more of the shoulders and is urged toward a portion of the bone near the shank.

In the Office action, claim 35 was rejected as being anticipated by Asnis. However, Asnis does not disclose or suggest every element of currently amended claim 35. For example, and for at least the same reasons as presented above for claims 5 and 19, the

reference does not disclose or suggest "the shank and the head each are part of a same monolithic structure, the head including at least three spaced shoulders of different diameter." Therefore, independent claim 35 should be allowed. Claims 36–40, which depend from claim 35, also should be allowed for at least the same reasons as claim 35.

2. Claim 39

At least some of the dependent claims further distinguish claim 35 patentably from the cited references. For example, claim 39 recites "wherein the step of selecting a bone screw includes a step of selecting a bone screw in which each shoulder slopes radially outward, generally toward the direction of advancement into bone." An exemplary embodiment of shoulders that slope as recited in claim 39 is presented in Figures 2-4 of applicants' disclosure. In the Office action, the Examiner stated that "Lahille et al. discloses shoulders which slope radially outward (Fig. 5, ref. 14)." Applicants respectfully disagree. Claim 39 recites that "each shoulder slopes radially outward, generally toward the direction of advancement into bone." Lahille, in contrast, discloses threads 14 with shoulders that slope radially outward, generally away from the direction of advancement into bone. Therefore, claim 39 should be allowed not only for depending from independent claim 35 but also for these additional reasons.

II. Conclusion

Applicants believe that each of the pending claims is patentable over the cited references. Accordingly, applicants respectfully request that the Examiner issue a Notice of Allowance covering all of the pending claims. If the Examiner has any questions, or if a telephone conversation would in any way advance prosecution of the

application, please contact the undersigned attorney of record, or his associate, Stan Hollenberg (Reg. No. 47,658), both at (503) 224-6655.

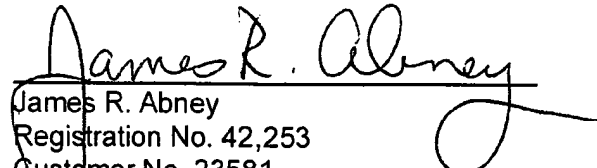
Respectfully submitted,

KOLISCH HARTWELL, P.C.

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